

**PATENT  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Application : SULLIVAN, et al.

Serial No. : Continuation of U.S. Serial No.  
09/248,860

Filed : Herewith

For : **LOW SPIN GOLF BALL  
COMPRISING A METAL, CERAMIC,  
OR COMPOSITE MANTLE OR  
INNER LAYER**

Examiner : P. Kim (of Parent)

Art Unit : 3729

Attorney Docket No. : P3611-2-D1-3-C1  
SLD 2 0158-1

Cleveland, Ohio 44114-2518  
July 26, 2001

**RESPONSE ACCOMPANYING  
CONTINUATION PATENT APPLICATION**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

This is a continuation application from U.S. application Serial No.  
09/248,860.

Claims 1-7, 12, 13, 20-24, 26-29, 32-35, 41-45, 47, 48 and 50 are  
re-presented in this new application as claims 1-30, respectively.

Set forth below is Applicants' response to a final rejection mailed  
February 27, 2001 and an Advisory Action mailed May 9, 2001 in the parent '860  
application. In addition, Applicants have included further reasons in support of  
the patentability of the pending claims.

In regard to the above-identified application, please consider the following comments and remarks.

### **REMARKS**

As previously noted, the above identified application is a continuation of U.S. Patent Application No. 09/248,860. During the prosecution of the '860 application, the Examiner finally rejected pending claims 1-7, 12, 13, 20-24, 26-29, 32-35, 41-45, 47, 48 and 50.

**A. The Examiner's Rejections of Claims 1, 7, 12, 13, 23, 24, and 26-29 in the Parent Case Under 35 U.S. C. §103(a) as Obvious Over U.S. Patent No. 5,824,746 to Harris in View of U.S. Patent No. 5,813,923 to Cavallaro Has Been Overcome**

The Examiner rejected claims 1, 7, 12, 13, 23, 24, and 26-29 (claims 1, 7-9, and 13-18 of the instant application) under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,824,746 to Harris in view of U.S. Patent No. 5,813,923 to Cavallaro.<sup>1</sup> Specifically, the Examiner stated:

Harris teaches a golf ball having a core, a polymeric mantle layer having a thickness of 0.005 inches to 0.125 inches formed with reinforcing materials such as glass, and a polymeric outer cover layer formed by ionomer with a Shore D hardness of from 15 to 80 and a thickness of from 0.005 inches to 0.125 inches. The golf ball of Harris has a diameter of more than 1.68 inches. However, Harris does not teach a Riehle compression of the core. Cavallaro teaches a golf ball that a core has a PGA compression of less than 70 (col. 6, lines 19-30). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided a Riehle compression of the core of Harris by a PGA compression value as taught by Cavallaro because greater distance can be achieved by increasing compression, which influences the distance the ball travels or rolls.

(Final Office Action, page 3, February 27, 2001)

Applicants submit that the '746 patent to Harris is not prior art to

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<sup>1</sup>References and discussions of claims will be made with regard to claims as numbered in the parent case, U.S. application 09/248,860. However, the corresponding claim number as re-presented in this new continuation will also be noted in parentheses. For the Examiner's convenience, a claim chart is also provided denoting the correspondence between claim numbers of the parent case and this new application. See Exhibit B.

the present application and does not render claims 1, 7-9 and 13-18 of the present application obvious. Rather, the claim elements, which the Examiner contended are rendered obvious by the '746 patent, find support in parent applications having priority dates prior to the '746 patent.

**1. The Claim Elements Recited in Claim 1 Find Support in U.S. Application No. 08/070,510**

Claim 1 (claim 1 of the present application) recites a golf ball comprising a core including a core component, a spherical mantle layer encompassing the core component and a polymeric outer cover disposed about the core. The mantle layer comprises a polymeric material and a reinforcing material dispersed throughout the polymeric material. The polymeric cover has a Shore D hardness of at least about 65.

The Examiner's rejection, as it pertains to claim 1, centers around Harris's disclosure of a golf ball containing a polymeric mantle layer, formed with reinforcing materials such as glass, and a polymeric outer cover layer formed by an ionomer.<sup>2</sup> Harris, however, is not prior art with respect to these elements. Rather, the claim elements are fully supported by U.S. Application Serial No. 08/070,510 from which the present application claims priority. The '510 application has a priority date of June 1, 1993, which predates the priority date of the Harris patent of June 5, 1996. A claim chart, attached herewith as Exhibit A, breaks down the elements of claim 1 that are contested by the Examiner. The chart also establishes the priority for those respective elements and summarizes the discussion that follows.

**a. Mantle layer comprising a polymeric material**

The Examiner contends that the '746 patent to Harris is prior art since it discloses a polymeric mantle layer.

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<sup>2</sup>Applicants note that the Examiner presents a broad sweeping rejection of claims 1, 7, 12, 13, 23, 24 and 26-29 in the parent case and fails to address the individual claim elements of the respective claims. Consequently, Applicants have extracted the arguments that appear to pertain to the specific claim elements of the respective claims. Applicants further note that no discussion is presented in the Examiner's Action with respect to the claimed feature of a core having a Reihle compression of at least about 75. The Examiner admitted that the '746 patent completely fails to disclose such a feature. (Final Office Action, February 27, 2001, page 3).

U.S. Application Serial No. 08/070,510 supports the claim element of a mantle layer comprising a polymeric material. The '510 application discloses at page 6, lines 10-13 and pages 11-24 that the inner cover layer, i.e., the mantle layer comprise ionomeric materials. Clearly a person skilled in the art would recognize that such materials are polymeric materials. The recited claim element of a mantle comprising a polymeric material is, therefore, entitled to the benefit of the '510 application's priority date of June 1, 1993. Consequently, the '746 patent is not prior art with respect to the claim element of a mantle layer comprising a polymeric material.

**b. A reinforcing material dispersed throughout the polymeric material (of the mantle layer)**

The '510 application supports the claim element of a mantle layer that includes reinforcing materials. Specifically, the '510 application discloses that an inner cover layer or mantle layer may include a reinforcing material "such as glass fibers and inorganic fillers" ('510 application, page 36, lines 12-24). Therefore, the claim element regarding reinforcing material dispersed throughout the polymeric material (of the mantle layer) is entitled to the benefit of the '510 application's June 1, 1993 priority date. Consequently, the Harris patent which has a filing date of June 5, 1996 is not prior art with respect to this element.

**c. Polymeric cover comprising an ionomer**

The '510 application discloses at page 6, lines 12-14 and pages 24-34 that the cover layer may include ionomers and ionomer blends. A cover layer with ionomer(s), therefore, has the benefit of the '510 application's filing date, i.e., June 1, 1993. Consequently, Harris is not prior art with respect to a cover layer that includes ionomers.

**d. Polymeric cover having a Shore D hardness of at least about 65**

The '510 application supports the cover having a Shore D hardness of at least 65. Specifically, the '510 application discloses that the

cover layer may include hard ionomer resins that exhibit a Shore D hardness of greater than 65. Table 3 on page 27 discloses suitable ionomer resins for the outer cover layer including Surlyn® 8940 and 8920 which exhibit Shore D hardnesses greater than 65.

#### **e. Conclusion**

In view of the foregoing, Applicants respectfully submit that the '746 patent to Harris is not prior art with respect to the elements in claim 1 upon which the Examiner bases his rejection. Consequently, the rejection of claim 1 as unpatentable under 35 U.S.C. § 103(a) as obvious in view of the '746 patent in further view of the '923 patent has been overcome. Applicants respectfully submit that claim 1 is in condition for allowance.

#### **2. The '746 patent is not prior art with respect to the claim elements of claim 7 in the Parent Case**

Claim 7 (also claim 7 of the present application), which is dependent from claim 1, recites that the reinforcing materials (utilized in the mantle layer) are selected from the group consisting of silicon carbide, glass, carbon, boron carbide, aramid materials, cotton, flax, jute, hemp, silk and combinations thereof.

Applicants submit that the '746 patent is not prior art with respect to claim 7. First, since claim 7 is dependent from claim 1, claim 7 includes all the limitations of claim 1, and, as previously described herein, the '746 patent is not prior art with respect to claim 1. Consequently, the '746 patent is not prior art with respect to claim 7.

Additionally, the 746 patent is not prior art with respect to the elements recited in claim 7. The '510 application teaches at 36, lines 21-22 that the mantle layer may include a reinforcing material such as glass fibers and inorganic fillers. So the '746 patent is not prior art with respect to either reinforcing materials or glass fibers. Furthermore, the '746 patent completely fails to disclose any of the reinforcing materials recited in claim 7. Therefore, the '746 patent is not prior art with respect to the materials recited in claim 7.

Applicants respectfully submit that the '746 patent is not prior art

with respect to the reinforcing materials recited in claim 7. Consequently, the rejection of claim 7 under 35 U.S.C. § 103(a) based on the '746 patent has been overcome. Applicants respectfully submit that claim 7 is in condition for allowance.

**3. The '746 patent is not prior art with respect to claim 12 in the Parent Case**

Claim 12 is dependent from claim 1 and recites that the mantle layer has a thickness of about 0.001 inches to about 0.100 inches.

Claim 12 is dependent from claim 1 and includes all the limitations recited in claim 1. Since the '746 patent is not prior art with respect to claim 1, the '746 patent is not prior art with respect to claim 12.

Furthermore, the '746 patent is not prior art with respect to the elements recited in claim 12. The '510 application discloses preferred parameters for the various golf ball layers such that the recited mantle thicknesses find support in the '510 application. Specifically, the '510 application discloses core diameters of about 1.495 inches to about 1.575 inches (page 35, lines 12-13), inner layer, i.e., mantle layer, thicknesses of about 0.010 inches to about 0.100 inches (page 36, lines 5-7) and outer cover layer thicknesses of about 0.010 inches to about 0.050 inches (page 36, lines 7-9). Clearly, the '510 application discloses a mantle layer thickness of 0.100 inches.

Applicants further note that the disclosed ranges are preferred ranges. A person skilled in the art would recognize that based on the listed parameters of the core and outer cover layer that additional inner cover layer thicknesses are contemplated. For example, a golf ball having a core of 1.575 inches and an outer cover layer with a thickness of 0.05 inches would have a mantle thickness of 0.0025 inches. A mantle thickness of 0.0025 inches is clearly within the claimed range of 0.001 inches.

For at least these reasons, the '510 application supports the mantle thickness element recited in claim 12. Consequently, the elements of claim 12 are entitled to the benefit of the '510 application's June 1, 1993 filing

date and the Harris patent is not prior art with respect to these elements. Applicants respectfully submit that the Examiner's rejection of claim 12 has been overcome. Claim 12 is in condition for allowance.

**4. The '746 patent is not prior art with respect to claim 13 in the Parent Case**

Claim 13 (claim 9 in the present application) is dependent from claim 1 and recites a mantle thickness of about 0.01 inches to about 0.03 inches.

First, since claim 13 is ultimately dependent from claim 1, claim 13 includes all the limitations recited in claim 1. Since the '746 patent is not prior art with respect to claim 1, the '746 patent is not prior art with respect to claim 13.

Additionally, the '746 patent is not prior art with respect to the elements recited in claim 13. The '510 application discloses that preferred inner cover thicknesses range from about 0.100 inches to about 0.010 inches and preferably the inner cover layer is about 0.0375 inches (page 36, lines 5-7). Clearly, the mantle layer thicknesses recited in claim 13 are within the ranges disclosed in the '510 application. The elements of claim 13 are, therefore, entitled to the benefit of the '510 application's June 1, 1993 filing date. Consequently, the '746 patent which has a priority date of June 5, 1996 is not prior art with respect to claim 13.

For at least these reasons, Applicants respectfully submit that the Examiner's rejection of claim 13 has been overcome. Claim 13 is in condition for allowance.

**5. The '746 patent is not prior art with respect to claims 23 and 24 in the Parent Case**

Claim 23 (claim 13 in the present application) is dependent from claim 1 and recites that the cover layer has a thickness of greater than about 0.0675 inches. Claim 24 (claim 14 in the present application) is dependent from claim 23 and recites a cover layer thickness of greater than 0.0675 inches to about 0.130 inches.

Applicants respectfully submit that the '746 patent is not prior art with respect to claims 23 and 24. First, since the '746 patent is not prior art with respect to claim 1 and claims 23 and 24 are dependent from or ultimately dependent from claim 1, the '746 patent is not prior art with respect to claims 23 and 24.

Additionally, the elements recited in claims 23 and 24 are supported by the '510 application such that the '746 patent is not prior art with respect to claims 23 and 24. The '510 application discloses preferred size parameters for the various golf ball layers. The '510 application discloses core diameters of about 1.495 inches to about 1.575 inches (page 35, lines 12-13), inner layer, i.e., mantle layer, thicknesses of about 0.010 inches to about 0.100 inches (page 36, lines 5-7) and outer cover layer thicknesses of about 0.010 inches to about 0.050 inches (page 36, lines 7-9). A person skilled in the art would recognize that based on the listed parameters of the core and inner cover layer that additional outer cover layer thicknesses are contemplated. For example, a golf ball having a core of 1.495 inches and a mantle layer of 0.01 inches would have a cover layer with a thickness of 0.0825 inches. Clearly this falls within the range recited in claims 23 and 24. The '510 application, therefore, supports a cover thickness of greater than 0.0675 inches as recited in claim 23 and within the range of 0.0675 inches to about 0.130 inches as recited in claim 24. Applicants respectfully submit that a cover thickness of greater than 0.0675 inches and/or a thickness greater than 0.0675 inches and 0.130 inches is supported by the '510 application and entitled to the benefit of the '510 application's June 1, 1993 filing date. Consequently, the '746 patent is not prior art to the claim at issue.

In view of the foregoing, Applicants respectfully submit that the '746 patent is not prior art with respect to claims 23 and 24. Applicants further submit that the Examiner's rejection of claims 23 and 24 based on the '746 patent have been overcome and that claims 23 and 24 are in condition for allowance.



**6. The '746 patent is not prior art with respect to claims 26-29 in the Parent Case**

Claims 26-29 (claims 15-18 in the present application) are dependent from or ultimately dependent from claim 1. Claims 26-29 are directed to the diameter of the golf ball. Specifically, claim 26 recites that the golf ball has a diameter of 1.680 inches to about 1.800 inches; claims 27, 28 and 29 recite golf ball diameters of about 1.700 inches to about 1.800 inches, about 1.710 inches to about 1.730 inches, and about 1.717 inches to about 1.720 inches, respectively.

Applicants respectfully submit that the '746 patent is not prior art with respect to claims 26-29. First, since the '746 patent is not prior art with respect to claim 1 and claims 26-29 are dependent from or ultimately dependent from claim 1, the '746 patent is not prior art with respect to claims 26-29.

Applicants further submit that the '510 application supports golf balls having a diameter of greater than 1.680 inches. Specifically, the '510 application teaches that the core, the inner cover layer and the outer cover layer combine to form a golf ball having a diameter of 1.680 inches or more (page 36, lines 9-12). A person skilled in the art would recognize that golf balls greater than 1.680 inches are contemplated. Additionally, the '510 application discloses preferred size parameters for the various golf ball layers. Specifically, the '510 application discloses core diameters of about 1.495 inches to about 1.575 inches (page 35, lines 12-13), inner layer, i.e., mantle layer, thicknesses of about 0.010 inches to about 0.100 inches (page 36, lines 5-7) and outer cover layer thicknesses of about 0.010 inches to about 0.050 inches (page 36, lines 7-9). A person skilled in the art would recognize that based on the listed parameters of the core, the inner cover layer and outer cover layer, that golf balls having a diameter of greater than 1.680 inches are contemplated. For example, a golf ball having a core of 1.575 inches, an inner cover layer having a thickness of 0.100 inches, and a cover layer having a thickness of 0.05 inches

yields a golf ball having a diameter of 1.875 inches.<sup>3</sup> Thus the '510 application supports a golf ball having a diameter as recited in claims 26-29. Consequently, claims 26-29 are entitled to the benefit of the '510 application's filing date of June 1, 1993, and the '746 patent is not prior art with respect to claims 26-29.

For at least these reasons, Applicants respectfully submit that rejection of claims 26-29 has been overcome. Claims 26-29 are in condition for allowance.

**7. Claims 1, 7, 12, 13, 23, 24 and 26-29 in the Parent Case (now renumbered as claims 1, 7-9, and 13-18 in the Present Application) are in condition for allowance**

In view of the foregoing, Applicants respectfully submit that the '746 patent is not prior art with respect to the present application. Consequently, the Examiner's rejection is misplaced and claims 1, 7, 12, 13, 23, 24 and 26-29 (now claims 1, 7-9, and 13-18) are in condition for allowance.

**B. The Examiner's Rejection of Claims 2, 5 and 6 in the Parent Case Under 35 U.S.C. § 103(a) as Being Unpatentable Over the '746 Patent In View of the '923 Patent, In Further View of U.S. Patent No. 5,810,678 to Cavallaro Has Been Overcome.**

The Examiner rejected claims 2, 5 and 6 (claims 2, 5 and 6 of the instant application) under 35 U.S.C. § 103(a) as obvious over the '746 patent to Harris in view of the '923 patent to Cavallaro in further view of U.S. Patent No. 5,810,678 to Cavallaro. Specifically, the Examiner stated:

Cavallaro ('678) teaches a golf ball having a mantle layer in the form of a formed polymeric material, a styrene-butadiene elastomers, or a thermoplastic polyester (col. 11, line 22 to col. 12, line 11). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided a polymeric materials used in the mantle layer of Harris, modified by Cavallaro ('923), by a styrene-butadiene elastomers or a thermoplastic polyester as taught by Cavallaro ('678) for the purpose of producing a low initial spin rate. By increasing a specific gravity of the mantle layer made of polymeric materials as stated above and decreasing a specific gravity of the core, the moment of inertial is increase, which will contribute to the lower initial spin rate.

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<sup>3</sup>The calculation for the diameter is as follows:  $1.575" + 0.100"(2) + 0.050"(2) = 1.875"$

(Final Office Action, page 3, February 2, 2001).

The '746 patent is not prior art with respect to claims 2, 5 and 6. Claims 2, 5 and 6 are dependent from or ultimately dependent from independent claim 1. Claims 2, 5 and 6, therefore, include all the limitations recited in claim 1. As previously described herein, the '746 patent is not prior art with respect to claim 1. Additionally, the Examiner did not reject claims 2, 5 and 6 based on any other disclosures in the '746 patent. Rather the Examiner's rejection of claims 2, 5 and 6 is based on elements not recited in claim 1 and not supported by the '746 patent. Consequently, the '746 patent is not prior art with respect to claims 2, 5 and 6. For at least these reasons, Applicants respectfully submit that the Examiner's rejection of claims 2, 5 and 6 has been overcome. Claims 2, 5 and 6 are in condition for allowance.

**C. The Examiner's Rejection of Claim 3 in the Parent Case Under 35 U.S.C. § 103(a) as Unpatentable Over the '746 Patent, In View of the '923 Patent, In Further View of U.S. Patent No. 5,779,562 to Melvin Has Been Overcome.**

The Examiner rejected claim 3 (claim 3 in the present application) under 35 U.S.C. § 103(a) as unpatentable over the '746 patent to Harris, in view of the '923 patent to Cavallaro, in further view of U.S. Patent No. 5,229,562 to Melvin. The Examiner stated that Harris modified by Cavallaro meets the claimed invention but fails to disclose thermoset materials utilized in the mantle layer. The Examiner then stated that the '562 patent discloses a golf ball having an outer core layer formed by a thermoset material including rubber based castable urethane or silicone rubber. The Examiner contended that it would have been obvious to a person skilled in the art to have used the thermoset materials disclosed by Melvin in the mantle layer of Harris as modified by Cavallaro.

Claim 3 is dependent from claim 1 and, therefore, contains all the limitations and elements of claim 1. As previously described herein, the '746 patent to Harris is not prior art with respect to claim 1. Specifically, the elements recited in claim 1 are supported by the '510 application, which is a great grand

parent to the present application, and are entitled to the benefit of the '510 application's filing date of June 1, 1993. Harris has a filing date of January 24, 1995. Therefore, Harris is not prior art to either claim 1 or claim 3 which is dependent therefrom. Consequently, the Examiner's rejection of claim 3 as obvious over the '746 patent, in view of the '923 patent, in further view of the '562 patent has been overcome. Applicants submit that claim 3 is in condition for allowance.

**D. The Examiner's Rejection of Claim 4 in the Parent Case Under 35 U.S.C. § 103(a) As Obvious Over the '746 Patent to Harris In View of the '923 Patent to Cavallaro, In Further View of U.S. Patent No. 5,823,891 to Winskowicz Has Been Overcome.**

The Examiner rejected claim 4 (claim 4 in the present application) as being unpatentable over the '746 patent to Harris, in view of the '923 patent to Cavallaro, in further view of U.S. Patent No. 5,823,891 to Winskowicz. The Examiner stated:

Harris, modified by Cavallaro ('923), meets the claimed invention but does not disclose a nylon based materials used in the mantle layer. Winskowicz teaches a golf ball having a layer between a core and a cover layer formed by polymers included nylon 6, 10, nylon 6,6 and nylon 6 (col. 4, lines 29-64). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided a polymeric material used in the mantle layer of Harris, modified by Cavallaro ('923), by the nylon-based materials as taught by Winskowicz ('891) for the purpose of providing a longer range of diffusion times of the polymer coating of the golf ball. Such polymers as indicated above are not soluble in water, but have a small but finite affinity for water.

(Final Office Action, page 4, February 27, 2001)

Claim 4, which is ultimately dependent from claim 1, recites nylon materials suitable for use in the mantle layer of the present invention. Specifically, claim 4 recites that the nylon material (of the mantle layer) is selected from the group consisting of nylon 6, nylon 6/10, nylon 6/6, nylon 11 and combinations thereof.

Again, the Examiner relied on the '746 patent to Harris to form a substantial part of his rejection of claim 4. As previously described herein, the

'746 patent is not prior art with respect to claim 1. Since claim 4 is dependent from claim 1 and includes all of the limitations recited in claim 1, the '746 patent is not prior art with respect to claim 4.

Moreover, the '891 patent is not prior art with respect to the elements recited in claim 4. The elements recited in claim 4 are entitled to a filing date that predates the Winskowicz patent such that the Winskowicz patent is not prior art. Specifically, the present application claims priority to U.S. Serial Application No. 09/027,482, now U.S. Patent No. 6,142,887. The '887 patent is entitled to a filing date of March 28, 1997, which predates the October 3, 1997 filing date for the '891 patent to Winskowicz. The '887 patent discloses nylon materials, and specifically those recited in claim 4, suitable for use in a golf ball mantle layer (see col. 22, lines 38-43 and Table 17). Claim 4 is, therefore, entitled to the benefit of the '887 patent's March 28, 1997 priority date. Consequently support for the claim elements recited in claim 4 predates the '891 patent's filing date such that the '891 patent is not prior art with respect to claim 4.

In view of the foregoing, Applicants respectfully submit that the '746 patent to Harris and the '891 patent to Winskowicz are not prior art with respect to claim 4. Consequently, the '746 and '891 patents do not render claim 4 obvious. Applicants respectfully submit that claim 4 is in condition for allowance.

**E. Rejection of Claims 20-22 in the Parent Case Under 35 U.S.C. § 103(a) As Unpatentable Over the '746 Patent, In View of the '923 Patent, In Further View of U.S. Patent No. 5,565,524 to Hamada Has Been Overcome**

The Examiner rejected claims 20-22 (claims 10-12 in the present application) under 35 U.S.C. § 103(a) as being unpatentable over the '746 patent to Harris, in view of the '923 to Cavallaro, in further view of U.S. Patent No. 5,565,524 to Hamada. The Examiner contended that Harris as modified by Cavallaro meets the claimed invention, but fails to disclose an ionomer composition of the cover layer. The Examiner then asserted that it would have

been obvious to modify the ionomers of Harris with the ionomers disclosed by the '524 patent, which teaches a golf ball having a cover layer formed by a carboxyl group in a copolymer of 80 to 90% by weight of alpha olefin and 10-20% by weight of alpha, beta-unsaturated carboxylic acid having 3 to 8 carbon atoms neutralized with a metal ion (final Office Action, February 27, 2000, page 5).

Claims 20-22 are immediately or ultimately dependent from claim 1. As such, claims 20-22 contain all the elements recited in claim 1. The Examiner, as previously described herein, contended that the '746 patent and the '923 patent meet the claimed invention recited in claim 1. However, as also previously described herein, the '746 patent is not prior art with respect to claim 1. Consequently, that patent is not prior art with respect to claims that are dependent from claim 1. Because the '746 patent is not prior art with respect to the claimed invention, the '746 patent fails to render the claimed invention obvious. Moreover, the '923 patent or the '746 patent, either alone or in combination with one another, fail to meet the claimed invention and/or render claims 20-22 obvious.

For at least these reasons, Applicants respectfully submit that claims 20-22 are in condition for allowance.

**F. The Rejection of Claims 32-35, 41-45, 47, 48 and 50 in the Parent Case Under 35 U.S.C. § 103(a) as Unpatentable Over the '746 Patent, In View of the '923 Patent, In Further View of U.S. Patent No. 4,863,167 Have Been Overcome**

The Examiner rejected claims 32-35, 41-45, 47, 48 and 50 (now claims 19-30 in the present application) under 35 U.S.C. § 103(a) as obvious over the '746 patent to Harris, in view of the '923 patent to Cavallaro, in further view of U.S. Patent No. 4,863,167 to Matsuki. Specifically, the Examiner stated:

Harris modified by Cavallaro ('923), meets the claimed invention but does not disclose a vitreous mantle layer or metal particles in mantle layer. Matsuki teaches a golf ball having an outer core layer included a filler having a zinc oxide, barium sulfate, silica and calcium carbonate. The mantle layer also have a high specific gravity filler included tungsten, tungsten carbide, nickel

and copper (col. 2, lines 38-45). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified a polymeric mantle layer of Harris, modified by Cavallaro ('923), by the composition of the vitreous outer core layer as taught by Matsuki ('167) because the filler having a high specific gravity is formulated in the outer core layer, it can be avoid lowering rebound characteristics.

(Final Office Action, February 27, 2001, page 6)

As previously described herein, the '746 patent to Harris and the '932 patent to Cavallaro are not prior art to the present application.

**1. The '746 patent and the '167 patent do not render claims 32-35 and 41-45 in the parent case obvious**

Independent claim 32 (now claim 19 in the present application) recites a golf ball comprising a vitreous mantle layer, a core having a Reihle compression of about 75 to about 115, and a polymeric outer cover having a Shore D hardness of at least about 65 disposed about the mantle.

The '746 patent is not prior art with respect to claim 32. The Examiner asserted that the '746 patent and the '923 patent meet the claimed invention save the vitreous mantle layer. By the Examiner's own admissions the '746 patent does not teach the Reihle compression element. That leaves the polymeric outer cover having a Shore D hardness of at least 65. As previously described herein regarding claim 1, the '746 patent is not prior art with respect to these features. Rather the '510 application, from which the present application claims priority, discloses these features and antedates the '746 patent. Consequently, the '746 patent is not prior art to claim 32 or claims 33-35 and 41-45 which are dependent from or ultimately dependent therefrom.

Additionally, the '167 patent does not render the claims obvious. The teachings of the '167 patent to Matsuki are not particularly relevant to the claims at issue. The '167 patent completely fails to disclose a vitreous mantle layer. Moreover, there is no teaching or suggestion regarding the specific combination of features recited in claim 32.

For at least these reasons, claim 32 and claims 33-35 and 41-45, which are dependent from or ultimately dependent from claim 32, are not

obvious based upon either the '746 patent or the '167 patent. Applicants respectfully submit that the Examiner's rejections have been overcome and that claims 32-35 and 41-45 are in condition for allowance.

**2. Claims 47, 48 and 50 in the parent case are not obvious in view of either the '746 or '176 patents**

Independent claim 47 (now claim 28 in the present application) recites a golf ball comprising a metal mantle layer disposed about the core, a core having a Reihle compression of about 75 to about 115 and a polymeric outer cover layer having a Shore D hardness of at least about 65 disposed about the core.

The '746 patent is not prior art with respect to claim 47. The Examiner asserted that the '746 patent and the '923 patent meet the claimed invention save the vitreous mantle layer. By the Examiner's own admissions the '746 patent does not teach the Reihle compression element. That leaves the polymeric outer cover having a Shore D hardness of at least 65. As previously described herein regarding claim 1, the '746 patent is not prior art with respect to these features. Rather the '510 application, from which the present application claims priority, discloses these features and antedates the '746 patent. Consequently, the '746 patent is not prior art to claim 47 or claims 48 and 50 which are dependent therefrom.

While the '176 patent does disclose metal *fillers*, the '176 patent fails to disclose or teach a metal mantle layer as set forth in the present application. Specifically, the '176 patent fails to disclose a metal mantle layer formed via two metal half shells, electroplating, thermal spray coating, or chemical vapor deposition. The '176 patent discloses metal fillers in a particular rubber composition and not a mantle layer formed from a metal material. a person skilled in the art would recognize a difference between a golf ball layer formed from a metal, as set forth in claims 47, 48 and 50, and a layer formed from a rubber composition that includes a metal filler.

For at least these reasons, the '176 patent fails to render claims 47, 48 and 50 obvious.



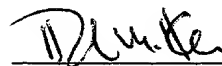
In view of the foregoing, Applicants respectfully submit that claims 32-35, 41-45, 47, 48 and 50 are not obvious based on any of the '746, 923 and/or '176 patents. Applicants respectfully submit that claims 32-35, 41-45, 47, 48 and 50 (now claims 19-30) are in condition for allowance.

### Conclusion

In view of the foregoing, Applicants respectfully submit that the claims of the present application are in condition for allowance.

Respectfully submitted,

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Mary Ann Temesvari

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**Claim Chart: Support In Parent Applications for Claim 1 of U.S. Application Serial No. 09/248,860<sup>1</sup>**

Element	Support	
	Parent Application/ Priority Date	Textual Support
the mantle layer comprising i) a polymeric material ii) a reinforcing material dispersed throughout the polymeric material	U.S. Application Ser. No. 08/070,510 6/1/93	i) polymeric material (page 6, lines 10-19): describes that the inner layer (i.e., the mantle) comprise ionomer, or other non-thermoplastic materials, i.e. polymeric materials ii) reinforcing material (page 36, lines 20-24): the cover compositions may contain...reinforcing materials such as glass fibers and inorganic fillers
a polymeric outer cover layer disposed about the core	U.S. Application Ser. No. 08/070,510 6/1/93	page 6, lines 10-19: the cover layers including the outer cover layer comprise ionomers and other non-ionomeric thermoplastic materials, i.e., polymeric materials

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<sup>1</sup>The claim chart includes only those elements that the Examiner questioned in his rejection of claim 1.

the polymeric cover comprising a material selected from the group consisting of a high acid ionomer, a low acid ionomer, an ionomer blend, a non-ionomeric elastomer, a thermoset material, and combinations thereof	U.S. Application Ser. No. 08/070,510 6/1/93	<b>high acid ionomer</b> (pg 27, lines 24-29; pg 28; Table 4): suitable for cover includes Iotek 4000 (16% acid); <b>low acid ionomer; ionomer blend; non-ionomeric elastomer</b> (pg 24, lines 7-11): the outer layer is comprised of a relatively soft, low modulus and low acid (less than 16 weight percent acid) ionomer, ionomer blend or a non ionomeric thermoplastic elastomer; additionally pg 24, lines 19-20 discloses that the outer layer preferably includes a blend of hard and soft ionomer resins.
the polymeric cover having a Shore D hardness of at least about 65	U.S. Application Ser. No. 08/070,510 6/1/93	page 27, table 3: discloses hard ionomers suitable for the outer cover layer; includes ionomers having Shore D hardness values greater than 65.

**EXHIBIT B**

<b><u>Claims in U.S. Application</u></b> <b><u>Serial No. 09/248,860</u></b>	<b><u>Claims in This New Continuation</u></b> <b><u>Application</u></b>
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